REMARKS

Claims 1-5, 7-11, 13-16, and 21-26 are pending. Claims 1-4, 7-10, and 13-15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,078,953 to Vaid et al. in view of U.S. Patent No. 6,513,031 to Fries et al. Claims 5, 11, 16, and 21-26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,078,953 to Vaid in view of U.S. Patent No. 6,513,031 to Fries et al. and U.S. Patent No. 5,276,677 to Ramamurthy et al.

Reconsideration is requested. No new matter is added. The specification is amended. Claims 27-32 are added. The rejections are traversed. Claims 1-5, 7-11, 13-16, and 21-32 remain in the case for consideration.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 103(a)

Referring to claim 1, the invention is directed toward a computer-implemented method for enforcing policy over a computer network, the method comprising: defining a template, the template including a first subset of vectors in a topological vector space, the topological vector space including at least one vector not in the template; assigning a policy to the computer network; monitoring a content stream on the computer network to construct an impact summary including a second subset of the vectors in the topological vector space; and enforcing the policy when the impact summary is within a threshold distance of the template.

Referring to claim 7, the invention is directed toward a computer-readable medium containing a program operable on a computer to enforce policy over a computer network, the program comprising: definition software to define a template, the template including a first subset of vectors in a topological vector space, the topological vector space including at least one vector not in the template; assignment software to assign a policy to the computer network; monitoring software to monitor a content stream on the computer network to construct an impact summary including a second subset of the vectors in the topological vector space; and enforcement software to enforce the policy when the impact summary is within a threshold distance of the template.

Referring to claim 13, the invention is directed toward an apparatus for enforcing policy over a computer network, the apparatus comprising: a computer; a template stored in the computer, the template including a first subset of vectors in a topological vector space, the topological vector space including at least one vector not in the template; a policy associated with the template; a monitor installed in the computer adapted to monitor a content

stream in the computer network to construct an impact summary including a second subset of the vectors in the topological vector space; and a policy enforcer adapted to enforce the policy when the monitor determines the impact summary to be within a threshold distance of the template.

In contrast, Vaid teaches a system and method for monitoring quality of service in a network. Vaid uses a traffic management tool coupled to a firewall server. The traffic management tool includes a flow control module and a queueing control module. A bandwidth management tool classifies an information flow into portions, which are directed to the flow control module and the queueing control module.

The Examiner acknowledges on page 3 of the Office Action dated September 2, 2004, that Vaid does not teach all of the features of the invention: namely, that Vaid does not teach "a template including 'a first subset of vectors in a topological vector space'" or "monitoring a content stream 'to construct an impact summary including a second set of the vectors . . .' for enforcing the policy when the impact summary is within a threshold distance of the template" (emphasis in Office Action). The Applicant is uncertain as to the reason why the Examiner underlined the term "impact summary" in the Office Action, but the Applicant does not believe Vaid teaches any portion of the features mentioned.

To support the obviousness rejection, the Examiner cites Fries. Fries teaches a system for improving search area selection. Fries operates by parsing a search query and determining what specific categories of information (termed "goals" by Fries) the user is interested in. The Examiner notes that Fries discloses "a 'support vector machine' and querying using 'semantic bits'".

Fries teaches a "support vector machine", which Fries uses to determine whether a particular query is "in" a particular category. But Fries still fails to teach the features the Examiner has acknowledged are not taught by Vaid. To begin with, the "semantic bits" of Fries are mentioned only in passing with reference to the support vector machine: specifically, at column 21, line 21. And even at that point, Fries only mentions the semantic bits as being one of the features returned by the QUERYENG. Whatever Fries's intended use of the semantic bits, the semantic bits are not used by the support vector machine. But for the moment, the Applicant will assume that the semantic bits are one of the features used by the support vector machine to construct the feature vector (also called a goal vector). Even making such an assumption, Fries still fails to teach the features of the claims for which the Examiner cites Fries.

The starting point in the analysis of Fries begins with the feature vector itself. According to Fries, "the support vector machine . . .treats each of the . . . features as a component of [the] feature vector" (column 20, lines 59-61). In other words, somehow, Fries transforms each feature into a number, which then becomes a single component in the feature vector.

The next point in the analysis examines what Fries does with the feature vector. According to Fries, "[t]he support vector machine compares the query's goal vector to a number of goal surfaces in an n-dimensional goal space defined by n features. Each n-dimensional goal surface separates the goal space into two sections. If a query's goal vector is in one section, the user has the particular search goal associated with the goal surface. If the query's goal vector is in the other section, the user does not have the particular search goal" (column 20, lines 61-67 and column 21, lines 1-2). In other words, for each surface, the feature vector is on one side of the surface or the other; which side of the surface the feature vector is on determines whether the user is (apparently) interested in the category associated with the surface.

At first blush, it would seem that Fries's goal surfaces could be oriented in any position in the n-dimensional space. But bear in mind that the feature vector is in an n-dimensional space, is being compared with n different features, and that Fries assigns each feature to a different component (that is, coordinate) of the feature vector. This means that each component has to be independent of all of the other components, which implies the goal surfaces are orthogonal to each other. Because Fries treats a feature as "a component" (note the singular form of the noun), the components must be independent. Thus, each component runs along a scale from -∞ to +∞, representing how well the query fits to that particular feature. This has several consequences. First, if the components are independent, then so are the goal surfaces (since each goal surface is defined by a feature). The goal surfaces thus must all be orthogonal to each other.

A second consequence of the components being independent is that, except for possible translation, the goal surfaces align perfectly with the coordinate system of the n-dimensional goal space. That is, each of the goal surfaces is parallel to exactly one of the hyperplanes defining the goal space. This means that the simplest implementation of the goal surfaces would be to align the goal surfaces perfectly with the axes of the coordinate system. This would allow a negative number for a particular component of the feature vector to indicate a negative correlation with the feature of the corresponding goal surface, a positive

number to indicate a positive correlation, and zero to mean no correlation, positive or negative.

An example might help. Consider the (very simple) situation of a 2-dimension coordinate system, which can be drawn on a piece of paper. Two axes, typically labeled "X" and "Y" are drawn, so that they are perpendicular (they meet at a 90 degree angle). Their point of intersection defines the origin of the coordinate system; all other points in the space can be measured as distances from the two axes. The goal surfaces of Fries have to be parallel to the "X" and "Y" axes, although they might not meet at the same point (but as said above, having the goal surfaces of Fries meet at the origin of the coordinate system offers technical advantages). This principle generalizes to multi-dimensional hyperspaces, although it becomes much more difficult to represent on paper.

What this means is that to make the comparison between the feature vector and the goal surface, Fries needs nothing more than simple addition or subtraction of two numbers. No vectors are required to represent the goal surface, and so the feature vector is not being compared against other vectors.

Finally, the support vector machine of Fries discusses only one vector: the feature vector (*see* column 20, line 58 through column 22, line 3). Regardless of the interpretation or meaning of the goal surfaces, the feature vector itself is what is being compared with the goal surfaces. Thus, the feature vector must be analogized to either the template or the impact summary. Regardless of the choice of analogy for the feature vector, and even if a single vector is considered a subset of a vector space, Fries does not even suggest, let alone teach, the possibility of the support vector machine generating multiple vectors. In contrast, new claims 27, 29, and 31 describe the template and the impact summary each as including multiple vectors. Thus, even if the combination of Vaid and Fries are interpreted to teach or suggest the invention as claimed in claims 1-5, 7-11, 13-16, and 21-26, the combination of Vaid and Fries fails to teach or suggest the invention as claimed in claims 27-32.

The Applicant also believes that there is no motivation to combine the references. The Applicant does not agree with the Examiner's assertion that Fries teaches an improvement/advantage on the traffic management tool. Instead, the Applicant asserts that Fries teaches a system that aids users in searching. Computers are definite in their search requirements: they do not need to have their search criteria "refined". People, on the other hand, may know what they want but be unable to express it clearly. Fries assists people with their indefiniteness; computers have no need for the advantage of Fries. In addition, Fries has

nothing whatsoever to do with traffic management; accordingly, Fries cannot teach an improvement or advantage on that tool, as the Examiner opines.

Finally, the Applicant expresses some confusion about the Office Action itself. In paragraph 9 of the Office Action dated September 2, 2004 (page 4), the Examiner includes references to an amendment of the Applicant. The Applicant is confused by these references, as the quoted portions are not in amendments made by the Applicant. Specifically, the Applicant cannot identify the source of the quote "'templates based on a vector that defines a threshold'". In fact, the invention does not define a threshold with a vector, so this quote makes no sense.

For the foregoing reasons, reconsideration and allowance of claims 1-5, 7-11, 13-16, and 21-32 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,
MARGER JOHNSON & McCOLLOM, P.C.

Ariel S. Rogson
Reg. No. 43,054

MARGER JOHNSON & McCOLLOM, P.C.
1030 SW Morrison Street
Portland, OR 97205
503-222-3613
Customer No. 20575

I hereby certify that this correspondence is being transmitted to the U.S. Patent and Trademark Office via facsimile number 703/872.9306, on November 2, 2004.

Jeanne Bower